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Allsteel Inc.
SF/Leak

Groundwater Management, Inc. A Marley Company

610 South 38th Street • Kansas City, Kansas 66106 • 913/321-6236

September 14, 1987

Mr. Dennis Newman, Project Manager
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Mr. Newman:

Enclosed, please find a draft copy of the work plan for installation of the bedrock monitoring well at Allsteel. The work plan outlines the monitoring well design and approximate location. Please review the work plan and contact Paul Buozis or myself with your comments as soon as possible.

Sincerely,

David B. Killen
Hydrogeologist

Enclosure

DK/jlt

GMI Groundwater Management, Inc.
SPECIALIZED GROUNDWATER ENGINEERING SERVICES

DAVID B. KILLEN
HYDROGEOLOGIST

913/321-6236

610 SOUTH 38TH ST.
KANSAS CITY, KS 66106

WORK PLAN FOR INSTALLATION
OF
BEDROCK MONITORING WELL
AT
ALLSTEEL INC., AURORA, ILLINOIS

I. INTRODUCTION

Groundwater Management, Inc. (GMI) and Layne-Western Company have been retained by Allsteel Inc. to install a bedrock monitoring well in relation to groundwater contamination at Allsteel's manufacturing facility in Aurora, Illinois. The nature of problems, and activities which have been conducted to date, are summarized in the report titled "Groundwater Contamination Investigation," dated June 9, 1987. The purpose of the bedrock well is to determine if contaminants have penetrated the bedrock below the overlying glacial drift.

II. SITE ASSESSMENT

A bedrock penetrating monitoring well will be installed within the limits of the contaminant plume and down gradient from the main body of the contamination on the eastern side of the Allsteel property (Figure 1). The well will be drilled using a ten-inch outer diameter hollow-stem auger to the top of the bedrock (Figure 2). A four-inch surface casing will be installed and cemented in place. The cement grout will be allowed to set for at least 24 hours. The hole will be deepened approximately ten feet into the bedrock using air or mud rotary drilling methods with a hole diameter of apporoximately 3 7/8 inches. The well will be constructed of 2-inch stainless steel casing and screen below the saturated zone, and PVC casing above the saturated zone. Filter material will consist of Ottawa silica #4 flint

or a similar clean quartz sand. The filter material will extend approximately one to two feet above the top of the screen and will be of a proper grain size so as not to enter the well through the screen openings. A two-foot bentonite plug will be placed above the filter. The remaining annular space up to just below the frost line will be filled with a cement-bentonite grout containing 3-5% bentonite by volume. The remaining annular space to the surface will be filled with cement. The surface slab will be constructed so that the cement will slope away from the well in all directions. The well will be enclosed in a protective steel casing with a locking cap.

All drilling operations and monitor well construction will be under the supervision of the on-site hydrologeologist.

The well will be developed by bailing or pumping until all fine material has been removed and the well produces clear water. The water produced during development and all drill cuttings will be placed in drums or tanks for proper disposal.

Water samples will be taken for volatile organic compound analysis no less than five days after development of the well. Samples will be collected using a stainless steel bailer with a teflon check valve. The static water level and the amount of free-floating product (if any) in the well will be measured and recorded. The samples will be placed in approved sample containers provided by the analytical laboratory selected to perform the analysis and will contain any preservative

required for a specific analysis. Each sample will be properly sealed and labeled, noting sample number, collector, date, time, and location. The samples will be stored in an ice chest at a temperature of approximately 4 degrees Centigrade until delivery to the laboratory. A chain-of-custody record will accompany all samples.

SAFETY PLAN

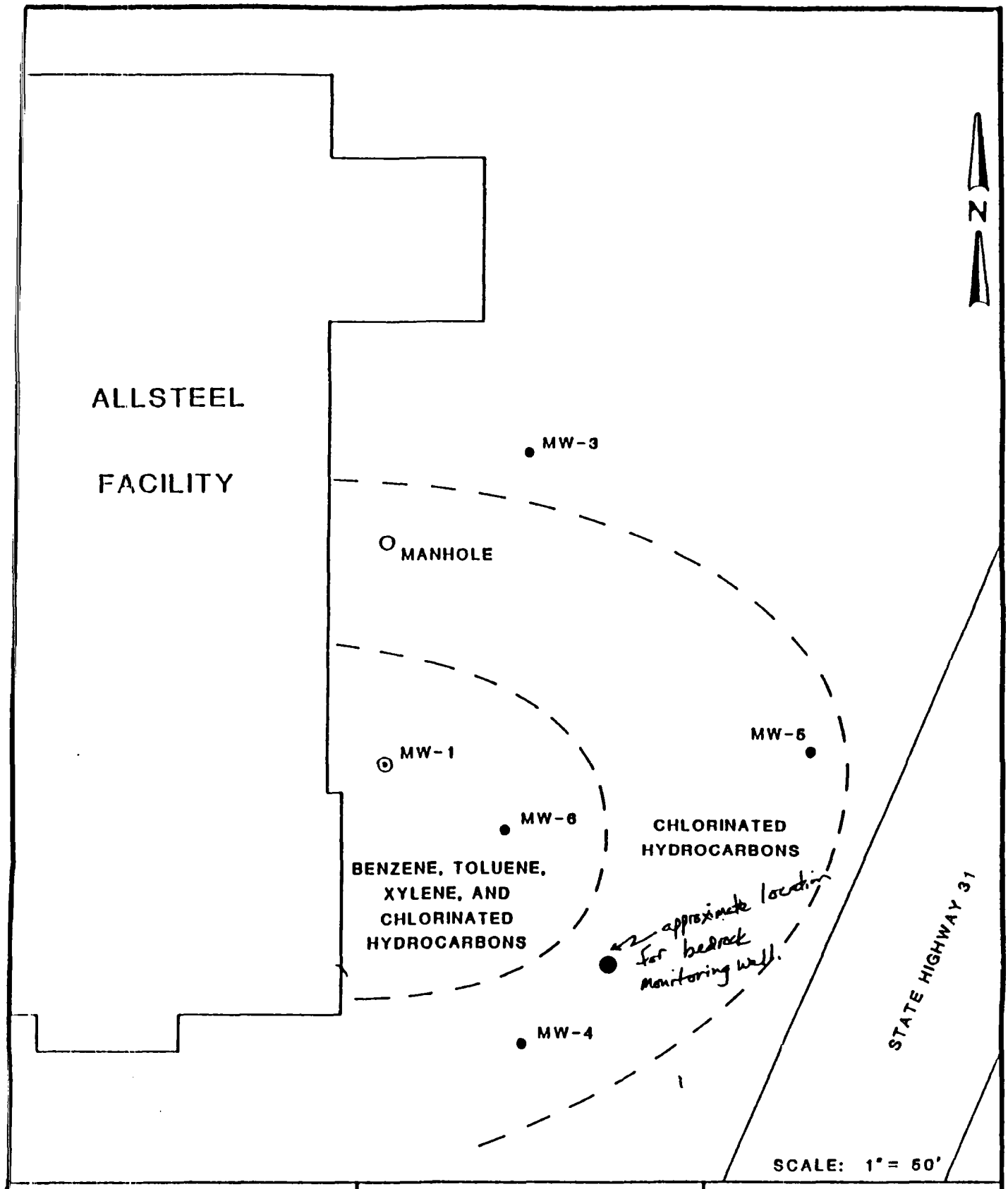
The health and safety plan previously submitted for work at the Allsteel site will be used for the work outlined in this document. The health and safety plan follows the guidelines and format as specified in the EPA manual entitled Health Guidance Manual for Hazardous Waste Site Activities (DHHS/NIOSH No. 85-115).

The Allsteel site health and safety plan will be followed by all Layne-Western and GMI site personnel including all subcontractors. The plan includes a thorough discussion of:

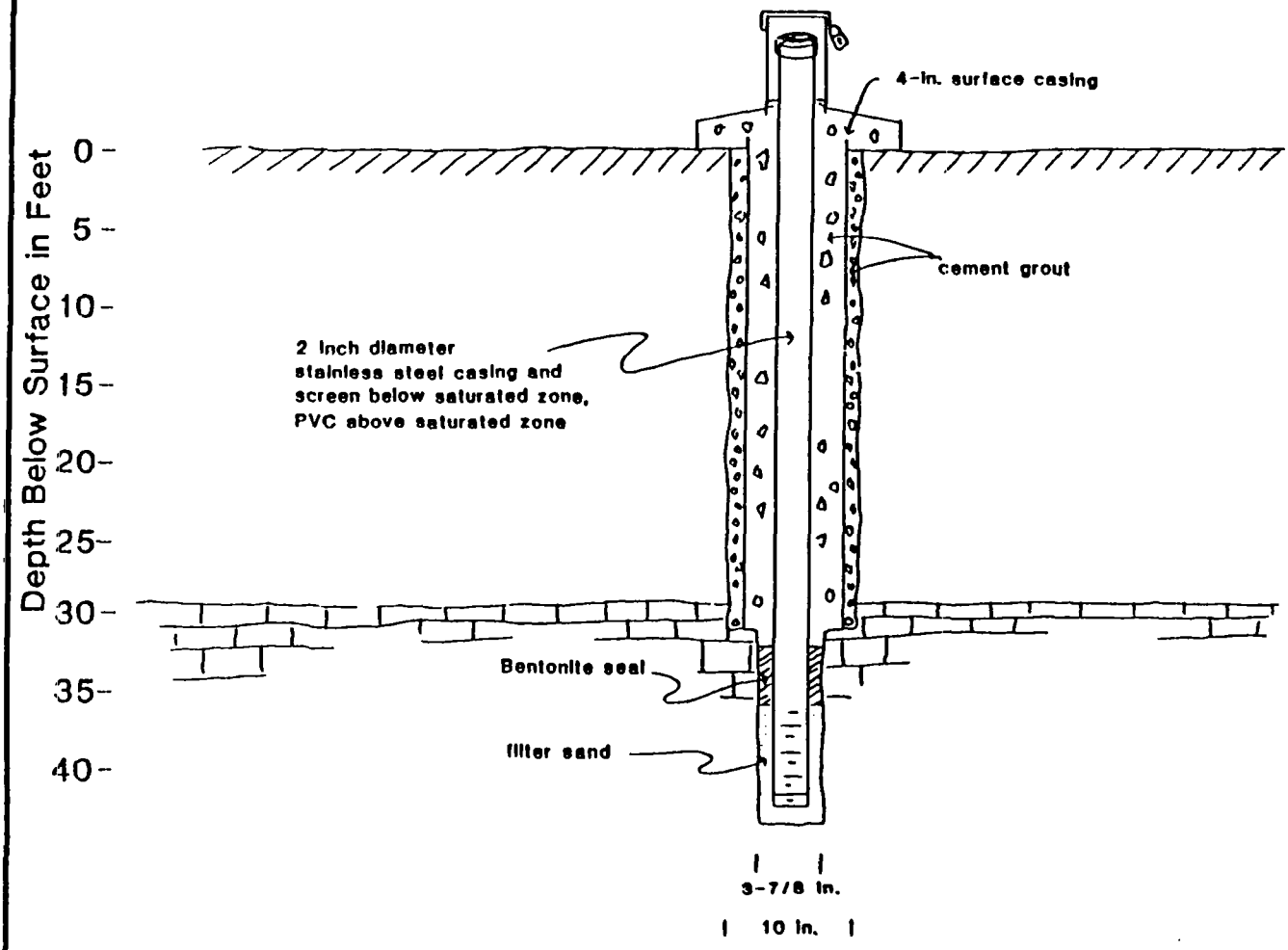
* Site personnel responsibilities
* Correct health and safety procedures, both general and site specific
* Emergency situations, procedures, and contracts
* The personal protection program for each level of protection
* The operation zones for site work
* Proper decontamination procedures including equipment, solutions, personnel, and disposal of contaminated materials

* Health and safety training and medical monitoring of personnel
* Site history and information
* Site hazardous substance descriptions (including MSDS)
* Site monitoring requirements

Based on the Allsteel site history and initially known contaminants, the site personnel will begin work utilizing Level D personal protective gear. Site personnel will be prepared to go to Level C protection if necessary.



JOB: ALLSTEEL JOB NO.: 390157 LOCATION: AURORA ILLINOIS	SUSPECTED CONTAMINANT ZONES	⊙ Existing Monitor Wells ● Monitor Wells Installed For This Study
GROUNDWATER MANAGEMENT, INC.		FIGURE: 1



JOB: ALLSTEEL JOB NO.: 39-0157 LOCATION: AURORA ILLINOIS	ALLSTEEL, INC. BEDROCK MONITOR WELL	HYDROLOGIST: PB DRAFTSMAN: MS DATE: 8-31-87
GROUNDWATER MANAGEMENT, INC.		FIGURE: 2